

## REMARKS

### I. Status of the Application

Claims 1-19 are pending in this application. In the April 19, 2007 office action, the Examiner objected to the drawings for failing to include typewritten and legible item numbers in compliance with 37 C.F.R. § 1.121(d). The Examiner also rejected claim 1 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. In addition, the Examiner rejected claims 13-17 under 35 U.S.C. § 101 as not providing a useful, concrete, or tangible result. The Examiner also rejected claim 1 under 35 U.S.C. § 112, second paragraph, for reasons unclear to the Applicant. Finally, the Examiner rejected claims 1-19 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,715,390 to Hoffman et al. (hereinafter "Hoffman"), in view of U.S. Patent No. 4,918,728 to Matyas et al. (hereinafter "Matyas"), and further in view of the Applicant's own admission.

In this response, Applicant has submitted replacement drawing sheets in compliance with 37 C.F.R. § 1.121(d). With respect to the claims, Applicant traverses the Examiner's rejection of claims 1-19. Finally, Applicant has added new claim 20.

### II. The Objection to the Drawings Should be Withdrawn

In the April 19, 2007 office action, the Examiner noted that the drawing item numbers must be typewritten or legible in compliance with 37 C.F.R. § 1.121(d). The Examiner also noted that new corrected drawings, in compliance with 37 C.F.R. § 1.121(d), are required in this application because of the hand drawing appearing in figures 1-3. Attached hereto are

replacement drawings sheets in compliance with 37 C.F.R. § 1.121(d). The attached replacement sheets are labeled “Replacement Sheet” in the header.

III. The Examiner’s Rejection of Claim 1 Under 35 U.S.C. § 112 First Paragraph Should be Withdrawn

In the April 19, 2007 office action, the Examiner rejected claim 1 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The Examiner’s rejection of claim 1 is respectfully traversed, because it is asserted that the specification complies with the enablement requirement of 35 U.S.C. § 112, first paragraph.

In order to determine if the specification meets the enablement requirement, one must determine if the “experimentation needed to practice the invention is undue or unreasonable.” MPEP § 2164.01. Factors to consider when analyzing the level of required experimentation include, the breadth of the claims, the nature of the invention, the state of the prior art, the level of one of ordinary skill, the level of predictability in the art, the amount of direction provided by the inventor, the existence of working examples, and the quantity of experimentation needed to make or use the invention based on the content of the disclosure. MPEP § 2164.01(a). The determination of “undue experimentation” is not to be made in a simple factual determination. *Id.* Conversely, all of the above factual considerations must be weighed against the specification. *Id.* Furthermore, “a patent need not teach, and preferably omits, what is well known in the art.” MPEP § 2164.01. With this rule as guidance, Applicant respectfully submits that for the reasons set forth below, undue experimentation is not required to practice the claimed invention.

The Examiner first argued the security component is not described in any detail that reveals how it is implemented. Applicant respectfully directs the Examiner to the specification pg. 5, lines 4-6, which describes the security component of claim 1 as including “a security key generator, an access key generator, and an access key comparator.” Furthermore at pg. 5 lines 6-11, the specification provides an example of how to use the security component of claim 1; however, those skilled in the art will recognize that other implementations and uses are possible. The above disclosure provides ample direction for those of ordinary skill in the art to construct or implement the elements comprising the security component of claim 1. Accordingly, the description of the security component satisfies the enablement requirement of 35 U.S.C. § 112, first paragraph, because the specification provides a description of the security component in such a way as to enable one skilled in the art to which it pertains to make or use the invention without undue experimentation.

Next the Examiner argued that the bypass component is not described in any detail that reveals how it is implemented. Applicant respectfully directs the Examiner to pg. 5, lines 11-16 of the specification, which describes the bypass component of claim 1 as including “an unlock timer and a data access monitor.” Timers are well known in the art and a description thereof would burden the Examiner with material that should preferably be omitted. *See* MPEP § 2164.01. The specification discloses on pg. 5, lines 12-14, that the data access monitor is a device that “detects a data access operation by the external device before the timer expires, [and] allows the operation to occur regardless of the access data state for the group level of the external device.” Thus the specification provides an example of how to

implement the bypass component of claim 1; however, those skilled in the art may choose to implement the bypass component in a number of alternate ways. Accordingly, the description of the bypass component satisfies the enablement requirement of 35 U.S.C. § 112, first paragraph.

The Examiner argued next that the “security component involves no description on how an externally generated key can match an internally generated key.” Applicant respectfully directs the Examiner to the specification page 5, lines 8-11. The specification discloses that the “access key comparator of the procedure compares the access key from the external device to the access key generated by the procedure.” Comparators are well known in the art, and from this description those skilled in the art would be able to determine how an externally generated key can match an internally generated key without undue experimentation, in satisfaction of 35 U.S.C. § 112, first paragraph.

Next the Examiner argued that “the bypass component involves no description of how the Decade4 tables are bypassed nor how the MFG Procedure of Figure 3 responds to a Request for Security Key.” Addressing the description of the bypass component first, Applicant respectfully directs the Examiner to the specification page 10, lines 11-22. The specification discloses that, “[i]n response to the data operation enable signal, unlock timer 70 is initiated to time an unlock interval and data access monitor 74 monitors data access operations performed by the external device.” Thus in one embodiment the Decade4 tables are bypassed through enablement of the unlock interval by the data operation signal. When the external device completes a write operation the data operation signal is no longer generated, thus ending the unlock interval and the bypass. Accordingly, “subsequent

operations are processed in accordance with the Decade4 security tables.” Thus the specification presents an example of how the bypass component bypasses the Decade4 security tables; however, those skilled in the art will recognize that other methods of bypassing the Decade4 security tables exist. Accordingly, it is respectfully submitted that the description of the bypass component is in satisfaction of 35 U.S.C. § 112, first paragraph.

Next, addressing the response of the MFG Procedure to a request for a security key, Applicant respectfully directs the Examiner to the specification page 11, lines 3-6. The specification discloses that the “request invokes a request processing procedure preferably stored in Table 7 by the manufacturer,” then “[u]sing a function,  $F_{sk}$ , procedure 50 generates a security key and stores it in Table8.” Thus the MFG procedure responds to a request for a security key by generating a security key and storing the key Table8. Although the specification provides an example of how the MFG Procedure responds to a request for a security key those skilled in the art will recognize that other methods of response exist. Accordingly, it is respectfully submitted that the description of the MFG Procedure to a request for a security key is in satisfaction of 35 U.S.C. § 112, first paragraph.

Finally, the Examiner’s 35 U.S.C. § 112, first paragraph rejections are respectfully traversed in whole, because the specification discloses that the security component and bypass component may, in one example, be representative of subroutines within a program run by the processor. Page 9, lines 19-23 of the specification discloses “a procedure to be executed by processor 18 may be implemented with the components shown in Fig. 2.” The components of figure 2 include the security key generator, the access key generator, the access key comparator, the unlock timer, and the data access monitor. Thus the specification contains a

description that enables one skilled in the art to which it pertains to make or use the invention of claim 1, in one example, through a program run by a processor as exemplified by the flow chart of Figure 4.

For all the above reasons, Applicant respectfully requests that the Examiner withdraw the rejection of claim 1 under 35 U.S.C. § 112, first paragraph.

IV. The Examiner's Rejection of Claim 13 Under 35 U.S.C. § 101 Should be Withdrawn

In the April 19, 2007 office action, the Examiner rejected claim 13 under 35 U.S.C. § 101 as not providing a useful, concrete, or tangible result. For at least the reasons outlined below, Applicant respectfully submits that claim 13 provides a useful, concrete, and tangible result in satisfaction of 35 U.S.C. § 101.

First, with respect to the "concrete" requirement, Applicant notes that when the result of a process cannot be assured there is a question of whether the invention produces a concrete result. MPEP § 2106. "Concrete" refers to a process that is substantially repeatable; therefore, the opposite of concrete is unrepeatable or unpredictable. *Id.* Thus, for a process to be concrete under 35 U.S.C. § 101, it must be capable of producing a substantially repeatable or predictable result.

In the April 19, 2007 office action, the Examiner noted that "[e]nabling a single data access operation by an external device, produces no useful, concrete, or tangible result, since enabling does not actually make or insure that a repeatable data access operation occurs." Applicant traverses this conclusion and submits that the limitation of claim 13 of "enabling" provides a useful, concrete and tangible result, as set for in further detail below.

The enabling limitation of claim 13 is concrete because the result is both repeatable and predictable. When the internally generated access key matches the externally generated access key the method enables a data access operation. When the internally generated access key and the externally generated access key are different the method does not enable a data access operation. This result of “enabling” occurs the same way each time the meter compares an externally generated key with an internally generated key after receiving a request for a security key. One can easily predict and repeat the result of claim 13 by simply comparing the two access keys, thus the “enabling” limitation of claim 13 is concrete.

Second, the “enabling” limitation of claim 13 provides a useful result. A result is useful under 35 U.S.C. § 101 when the result is specific, substantial, and credible. MPEP § 2106. It is respectfully submitted that the result of enabling is specific, substantial and credible. Thus, Applicant respectfully submits that the enabling limitation of claim 13 is useful in satisfaction of 35 U.S.C. § 101.

Third, the “enabling” limitation provides a tangible result. A result is tangible under 35 U.S.C. § 101 when the result is not abstract. MPEP § 2106. A result is abstract when it is “not applied or practical; theoretical.” AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE: FOURTH EDITION 2000. Thus for a claim to be tangible under 35 U.S.C § 101 it must be applied and practical.

The result of claim 13 is tangible because it produces a practical result that has been applied to the functionality of a utility meter. The method produces the practical result of enabling a utility meter to bypass the security tables thus granting an external device that has responded with an appropriate access key the opportunity to access data within the utility

meter. Thus because the method of claim 13 is both applied and practical the method is not abstract, and accordingly the method is tangible in satisfaction of 35 U.S.C. § 101.

For the above reasons Applicant respectfully submits that at least the limitation of “enabling a data access operation to occur,” produces a useful, concrete, and tangible result in satisfaction of 35 U.S.C. § 101. Accordingly, it is respectfully submitted that the examiner’s rejection of claim 13 under 35 U.S.C. § 101 should be withdrawn.

V. The Examiner’s Rejection of Claim 1 Under 35 U.S.C. § 112 Second Paragraph

In the April 19, 2007 office action, the Examiner rejected claim 1 under 35 U.S.C. § 112, second paragraph. In particular, the Examiner stated, “Claim 1 is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree....” Applicant does not understand what is meant by the Examiner’s comment, and respectfully submits that the Examiner’s rejection is unclear. In particular, what is meant by, “claim 1 is not defined by the claim ...?”

Applicant believes that the form of claim 1 is in compliance with 35 U.S.C. § 112, second paragraph. Thus, Applicant respectfully requests that the Examiner withdraw the rejection of claim 1 under 35 U.S.C. § 112, second paragraph.

VI. The Examiner’s Rejection of Claim 1 Under 35 U.S.C. § 103(a) Should be Withdrawn

In the April 19, 2007 office action, the Examiner rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Hoffman in view of Matyas, and further in view of the Applicant’s own admission. Applicant respectfully traverses the Examiner’s rejection of



claim 1 under 35 U.S.C. § 103(a), as the Examiner has failed to make a *prima facie* case of obviousness as described in MPEP § 2142-2143.

A. The References Do Not Teach or Suggest All Claim Limitations

In order to establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art. MPEP § 2143.03. Examiner has failed to make a *prima facie* case of obviousness because neither Hoffman, Matyas, nor the Applicant's own admissions teach or suggest all the limitations of claim 1, either alone or in combination.

One example of a limitation of claim 1 that is not taught or suggested by the cited references is that of "an internally generated access key." The Examiner suggested in the April 19, 2007 office action, that the read-protected passwords in the RAM of Hoffman and the internally generated access key of claim 1 are equivalent. As outlined below, significant differences exist between the internally generated password of claim 1 and the read protected passwords of Hoffman.

The electricity meter of Hoffman employs an enablement scheme aimed at reducing the possibility that an electricity meter upgrade password may be inappropriately used to upgrade more than one meter. The enablement scheme compares an externally generated password with a password stored within the meter's nonvolatile RAM. No passwords are internally generated in Hoffman.

It should be noted that only the upgradeable features are protected by the enablement scheme of Hoffman. Frequent operations such as calibration, testing, and programming are accomplished through an optical communications port, and do not utilize the read protected passwords. Because it may be necessary to upgrade a meter only a few times in its service

life, a large number of passwords are not required; accordingly, only a limited number of passwords are stored in the read protected nonvolatile RAM. In addition, the passwords are not *generated* within the meter of Hoffman they are simply stored in the RAM and recalled when an upgrade command is initiated. Hoffman discloses a method of bypassing calibration, testing, and programming features by requiring a new password each time the features are bypassed. With this scheme Hoffman would eventually run out of passwords because the system can only refer to the limited number of passwords stored in the RAM. Accordingly, a user might compromise security once the meter begins to utilize the same password more than once.

In contrast to Hoffman, the electricity meter of claim 1 employs an altogether different protection system. For example, claim 1 calls for an “internally *generated* an access key”. With such an internally generated access key, the utility meter of claim 1 could regularly enable an external device to access each security protected feature without depleting a limited number of stored passwords. The frequency with which calibration, testing, and programming occurs could demand such a system.

As set forth above, the Hoffman does not teach “an internally generated access key”. Therefore it is respectfully submitted that the Examiner has failed to present prior art that teaches or suggests all the limitations of claim 1. Accordingly, the Examiner has not made a *prima facie* case of obviousness and the 35 U.S.C. 103(a) rejection of claim 1 should be withdrawn.

B. The Prior Art Teaches Away

When the prior art teaches away from the claimed invention, there is a suggestion of a lack of *prima facie* obviousness. MPEP § 2145; *See In re Fine*, 873 F. 2d 1071 (Fed. Cir. 1988).

In the present case, the Examiner has combined Hoffman and Matyas. The Examiner argued that when viewed in combination, Hoffman describes a system in terms of security features and Matyas teaches a “back door” or bypass method for generating keys. Applicant respectfully submits that the Examiner has not made a *prima facie* case of obviousness because Matyas teaches away from the claimed invention. *In re Geisler*, 116 F.3d 1465, 1471 (Fed. Cir. 1997).

Matyas teaches a method of enhanced security data cryptography whereby a control vector is associated with a data cryptography key to provide a method of authorization for the uses of the key intended by the originator of the key. The control vector is coupled to a system generated key; however, it is possible, though undesirable, to associate a control vector with a non system generated key, because the control vector is unable to detect the origin of a system key. This second method of associating a control vector with a non system generated key is referred to by the Examiner as the “back-door” method.

The Examiner noted in the April 19, 2007 office action, that according to Matyas the back door method is “primarily an annoyance” and additional methods should be taken to avoid the back door method. Matyas discloses that it is desirable and simple to design an architecture that avoids the back door method. See Matyas, column 15, lines 35-39. Both Matyas and the present invention are directed to data access. In Matyas, the “back door” is

viewed as a problem to be eliminated. See Matyas, column 15, lines 40-41. By contrast, the bypass component of the present application provides a desirable method of data access. Thus, it is respectfully submitted that Matyas teaches away from the present invention, and the Examiner has not made a *prima facie* case of obviousness. Accordingly, the Examiner's rejection of claim 1 under 35 U.S.C. § 103 should be withdrawn.

As set forth above, the references cited by the examiner do not disclose all of the limitations of claim 1. Furthermore, the cited references actually teach away from the claimed invention such that there is no motivation to combine references. Accordingly, it is respectfully submitted that the Examiner has not made a *prima facie* case of obviousness and the 35 U.S.C. 103(a) rejection of claim 1 should be withdrawn.

VII. The Examiner's Rejection of Claim 13 Under 35 U.S.C. § 103(a) Should be Withdrawn

In the April 19, 2007 office action, the Examiner rejected independent claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Hoffman in view of Matyas, and the Applicant's own admission. However, the examiner provided no basis for the rejection of claim 13 under 35 U.S.C. § 103 in the April 19, 2007 Office action. "The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness." MPEP § 2142. Applicants believe that claim 13 was mistakenly rejected under 35 U.S.C. § 103(a). Accordingly it is respectfully submitted that the rejection of claim 13 should be withdrawn.

VIII. The Examiner's Rejection of Claims 2-12 and 14-19 Under 35 U.S.C. § 103(a) and 35 U.S.C. § 101 Should be Withdrawn

In the April 19, 2007 office action, the Examiner rejected dependent claims 2-12 under 35 U.S.C. § 103(a); rejected dependent claims 14 – 19 under 35 U.S.C. § 103(a); and rejected dependent claims 14-17 under 35 U.S.C. § 101. Each of the above claims depends from and incorporates all of the limitations of one of independent claims 1 or 13. As set forth above, the Examiner's rejection of claims 1 and 13 should be withdrawn. Therefore, because each of dependent claims 2-12 and 14-19 depends from and incorporates all of the limitations of one of independent claims 1 or 13, the Examiner's rejection of dependent claims 2-12 and 14-19 should also be withdrawn for at least the same reasons.

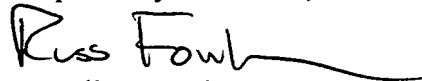
IX. Conclusion

For all of the foregoing reasons, it is respectfully submitted that the Applicant has made a patentable contribution to the art. Favorable reconsideration and allowance of this application is therefore respectfully requested.

In the event Applicant has inadvertently overlooked the need for an extension of time or payment of an additional fee, the Applicant conditionally petitions therefore, and authorizes any fee deficiency to be charged to deposit account 13-0014.

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Respectfully submitted,



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